

## SEMICONDUCTOR TECHNICAL DATA

# KRC110S~ KRC114S

EPITAXIAL PLANAR NPN TRANSISTOR

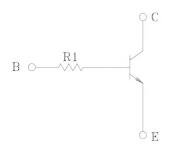
#### SWITCHING APPLICATION.

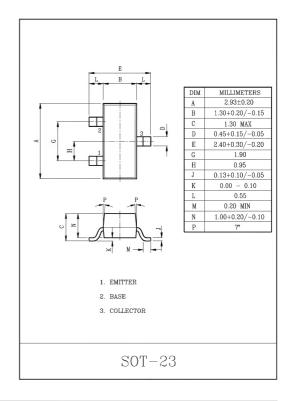
INTERFACE CIRCUIT AND DRIVER CIRCUIT APPLICATION.

#### **FEATURES**

- · With Built-in Bias Resistors.
- · Simplify Circuit Design.
- · Reduce a Quantity of Parts and Manufacturing Process.

#### EQUIVALENT CIRCUIT





#### MAXIMUM RATINGS (Ta=25℃)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	$V_{CBO}$	50	V
Collector-Emitter Voltage	$V_{CEO}$	50	V
Emitter-Base Voltage	$V_{EBO}$	5	V
Collector Current	$I_{\mathbb{C}}$	100	mA

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector Power Dissipation	$P_{C}$	200	mW
Junction Temperature	Tj	150	$^{\circ}$
Storage Temperature Range	$T_{ m stg}$	-55~150	್ಲಿ

#### ELECTRICAL CHARACTERISTICS (Ta=25°C)

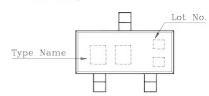
CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		$I_{CBO}$	$V_{CB}=50V, I_{E}=0$	-	-	100	nA
Emitter Cut-off Current		$I_{\mathrm{EBO}}$	$V_{EB}$ =5V, $I_{C}$ =0	-	-	100	nA
DC Current Gain		$h_{ m FE}$	V <sub>CE</sub> =5V, I <sub>C</sub> =1mA	120	-	-	
Collector-Emitter Saturation Voltage		V <sub>CE(sat)</sub>	I <sub>C</sub> =10mA, I <sub>B</sub> =0.5mA	-	0.1	0.3	V
Transition Frequency		f <sub>T</sub> *	$V_{CE}$ =10V, $I_{C}$ =5mA	-	250	-	MHz
Input Resistor	KRC110S	$R_1$		=	4.7	-	
	KRC111S			-	10	-	
	KRC112S			_	100	-	kΩ
	KRC113S			-	22	_	
	KRC114S			-	47	-	

Note: \* Characteristic of Transistor Only

#### MARK SPEC

TYPE	KRC110S	KRC111S	KRC112S	KRC113S	KRC114S
MARK	NK	NM	NN	NO	NP

Marking



# KRC110S~KRC114S

### ELECTRICAL CHARACTERISTICS (Ta=25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	ТҮР.	MAX.	UNIT	
		KRC110S	t <sub>r</sub>		-	0.025	_	
		KRC111S			-	0.03	-	
	Rise Time	KRC112S			-	0.3	-	
		KRC113S			_	0.06	_	
Switching Time  Storage Time  Fall Time		KRC114S			-	0.11		
	Storage Time KI	KRC110S	t <sub>stg</sub>	$V_{O}$ =5V $V_{IN}$ =5V $R_{L}$ =1k $\Omega$	_	3.0	-	
		KRC111S			_	2.0	_	
		KRC112S			_	6.0	_	μS
		KRC113S			_	4.0	_	
		KRC114S			_	5.0	_	
	Fall Time	KRC110S	$t_{\mathrm{f}}$		_	0.2	_	
		KRC111S			_	0.12	_	
		KRC112S			_	2.0	-	
		KRC113S			_	0.9	_	
		KRC114S			_	1.4	_	